



**CITY OF FLAGSTAFF
MAY 2004 BOND ELECTION
PROPOSED PROJECT
*DRAFT***

PROJECT TITLE: Wastewater Improvements

PROJECT DESCRIPTION:

This project would upgrade the treatment quality at the Wildcat Hill Treatment Plant to meet A+ reclaimed water standards.



The project converts the treatment process to an activated sludge process with nitrogen removal. Other components include an additional sludge digester, sludge mixing facilities, sludge storage/thickening, additional sludge stabilization basin, septage and grease storage.

The project replaces the existing traveling bridge sand/anthracite filters at the Rio de Flag Plant with four disc filters which are newer technology, require reduced maintenance and allow the plant to consistently meet demand.

Included in the project is a pump station and 20" diameter reclaimed water line extensions that will connect the Wildcat Hill Treatment Plant to Siler Homes. The pump station and pipeline connections are necessary to connect the two reclaimed water systems together. Presently there is the Rio de Flag west side system that produces A+ reclaimed water and the Wildcat Hill east side system that produces B water.

PROJECT COST AND FUNDING SOURCE: \$22,700,000 *

If approved, bonds would be issued that would be repaid with utility user fees and capacity fees.

USE OF BONDING AUTHORITY:

The cost estimate for this project is a result of a comprehensive study of alternatives conducted by Black & Veatch for the bond program last year. The Wildcat Plant improvements are estimated to cost \$18,000,000. The filter improvements at the Rio Plant and reclaim line work could be broken out and phased, requiring funding by higher user fee increases than if they are included in the bond package. It is not recommended that this project be broken up. We want to minimize user fee increases and we are sure our customers wish this as well.

ESTIMATED ANNUAL OPERATING COSTS:

Estimated operating and maintenance costs, according to the Black & Veatch study, are \$196,049 per year for the blower power. The existing plant O&M cost will be reduced as a result of newer equipment, requiring less maintenance, less overtime, fewer chemicals, and SCADA control of the plant. The City expects to see a reduction of the existing O&M of up to \$100,000 per year.

PROJECT BENEFITS:

- Upgrading the treatment quality at the Wildcat Plant permits combined use with reclaimed water from the Rio de Flag Plant. This will make more A+ reclaimed water available for open-access irrigation required for planned residential, school, and park use. The project will take three years to complete.
- The additional sludge treatment components are needed whether the plant upgrade takes place or not and will be considered a significant plant improvement. The improvement is anticipated to trigger the requirement of the plant upgrade by ADEQ to meet Aquifer Protection Permit (APP) requirements. Previously the plant has been "grandfathered." The improvement will also alleviate the need to replace the media in the existing bio-towers at an estimated cost of \$3,000,000.
- The Rio de Flag filters experience biological plugging of the porous media on a monthly basis and requires taking them out of service and superchlorinating. The process takes about two days and reduces the plant capacity by 50%. The new filters will fit in the existing filter basins, and not require any building expansion, still leaving space for four future filters.
- The four filters will allow for one to be in a standby mode and at the same time give the plant full operating capacity. The disc filters can be backwashed while operating. The connection will provide for greater integrity of the existing system and supply east Flagstaff. The project will provide for additional A+ reclaimed water to be available for system growth, which includes parks, NAU, and industrial use.

* Footnote: The project costs represent estimated current dollars (uninflated, not representing the time value of money).